

Abstract

BackgroundTrends in **gastroenteritis-associated** mortality are changing over time with development of antibiotic resistant strains of certain pathogens, improved diagnostic methods, and changing healthcare. In 1999, ICD-10 coding was introduced for mortality records which can also affect trends. We assess trends in **gastroenteritis-associated** mortality and changes associated with coding.

MethodsTrends in **gastroenteritis-associated** mortality rates in the United States were examined using the National Center for Health Statistics Multiple Cause-of-Death Mortality databases for 1985-2005. All deaths with the underlying cause or any contributing cause included gastroenteritis were included. Cases were selected based on ICD9 (pre-1999) and ICD10 (1999-2005) codes and all analyses were stratified by ICD usage. Annual trends in age adjusted mortality rates were assessed using linear regression spline analysis. Relative risks and 95% confidence intervals (CIs) were calculated using Poisson regression adjusted for age group, sex, race, and region.

ResultsThere were a total of 190,674 deaths related to gastroenteritis in the U.S. from 1985-2005 with an average of 9,080 per year. During this time the percent of deaths related to gastroenteritis more than tripled, increasing from 0.25% to 0.80% of all deaths. Though the time periods varied in length, we demonstrate a significant increase in slope from a 0.0054% annual increase during the period 1985-1998, when ICD-9 coding was used, to a 0.0550% annual increase during 1999-2005, when ICD-10 coding was used. For both time periods, the oldest age group (75+ years) demonstrated the highest risk of death due to gastroenteritis. Additionally, males demonstrated higher risk than females and blacks were at higher risk than whites for death due to gastroenteritis.

ConclusionsThis analysis demonstrates the public health burden of **gastroenteritis-associated** mortality in the United States and changes in trends due to change from ICD-9 to ICD-10 coding. The overall rate of **gastroenteritis-associated** mortality has more than tripled over the 21-year period from 1985 to 2005 and the primary burden of deaths due to gastroenteritis is in the elderly population.